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Arne Berg

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EXAMINER

KANG, JULIANA K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Art Unit: 2874

1. Applicant's election without traverse of Species 2 (claims 1, 6-26 and 31-39) in the reply filed on December 16, 2005 is acknowledged. Claims 2-5, 27-30 and 40-46 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 1, 6, 8-10, 21-24, 31-33 and 39 are rejected under 35 U.S.C. 102(a) as being anticipated by Maas et al (U.S. Patent 6,549,488 B2).

Regarding claims 1, 6, 8-10, 21-24, 31-33 and 39, Maas et al disclose a fiber-optic hydrophone comprising: a housing (122) enclosing a liquid channel (128) a diaphragm (134) attached to the housing; a bore (146, tunnel) through the center of the mandrel; and an optical sensor (130, optical fiber) wound around (routed) on a mandrel (126) within the liquid for sensing the acoustic pressures in the fluidic media, wherein the mandrel is non-rigidly coupled to the housing by O-ring (136) (see Fig. 5A).

Regarding claims 17 and 32, Maas et al disclose channel orifices (62) in end cap (60) providing for fluid flow into fluid channel.

Regarding claim 23, Maas et al disclose a tube (132) placed within the fluid channel (128) thus the tube is a filler member that reduces the volume of the liquid enclosed in the housing.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11, 12, 14-16, 18, 19, 25, 26 and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maas et al.

Regarding claims 11, 12, 26 and 37, Maas et al teach placing an optical coupler, other optical components (see column 8 lines 49-50). Thus, using a sealed feedthrough in the housing of Maas et al would have been obvious to one having ordinary skill in the art to prove optical connection to outside of the housing while protecting the components from contamination.

Regarding claims 14-16, 25 and 34-36, as described above Maas et al disclose the claimed invention except grooves formed on the surface of the mandrel. Using groove to arrange an optical fiber in place is well known in the art. Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply grooves in Maas et al to hold the fiber that is wound around the mandrel in place so that fiber does not move around to obtain better measurement.

Regarding claim 18 and 19, Maas et al show the diaphragm sandwiched between the housing and a ring (see Fig. 5A) but does not teach that the diaphragm is welded to the housing. Welding is well known in the art to provide physical attachment of one component to another. Thus welding the diaphragm to the housing would have been obvious to attach the diaphragm to the housing.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maas et al as applied to claim 1 above, and further in view of Jerman (U.S. Patent 5,209,118).

As described above Maas et al disclose the claimed invention except the diaphragm having corrugations. Jerman teaches using corrugated diaphragm exhibits a larger range of linear deflection to applied pressure and minimizes stretching effect (see column 2 lines 20-23). Thus it would have been obvious to one having ordinary skill in the art at the time the invention was made to use corrugated diaphragm in Maas et al as taught by Jerman to protect the diaphragm from stretching.

Allowable Subject Matter

7. Claim 13 and 38 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The closes prior art made of record, Maas et al, fails to teach an additional fiber having a grating that is routed in the tunnel of mandrel along with other claimed features.

Art Unit: 2874

Conclusion

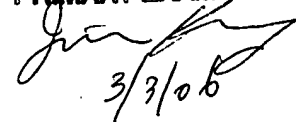
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Maron et al (U.S. Patent 5,892,860), Woo (U.S. Patent 6,882,595 B2), Winston et al (U.S. Patent 6,351,987 B1), Quigley et al (U.S. Patent 6,706,348 B2), Berg et al (U.S. Patent 6,888,972 B2), Ogle et al (U.S. Patent 6,233,374 B1), Schroeder et al (U.S. Patent 6,218,661 B1) and Ramos et al (U.S. Patent 6,246,048 B1).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliana K. Kang whose telephone number is (571) 272-2348. The examiner can normally be reached on Monday through Thursday 8:00 AM-2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JULIANA KANG
PRIMARY EXAMINER



3/3/06